Historic, archived document

Do not assume content reflects current scientific knowledge, policies, or practices.

F. M. 70

41
22

UNITED STATES DEPARTMENT OF AGRICULTURE
Bureau of Agricultural Economics

FARM COSTS AND RETURNS, 1945-47
COMMERCIAL FAMILY-OPERATED FARMS IN 6 MAJOR FARMING REGIONS

LIBRARY
CURRENT SERIAL RECORD
OCT 27 1948
U. S. DEPARTMENT OF AGRICULTURE

Washington, D. C.
September 1948

F.M.70

UNITED STATES DEPARTMENT OF AGRICULTURE
Bureau of Agricultural Economics
Washington 25, D. C.

September 1948

FARM COSTS AND RETURNS, 1945-47
COMMERCIAL FAMILY-OPERATED FARMS IN 6 MAJOR FARMING REGIONS [1]

By Wylie D. Goodsell, Agricultural Economist

High production and rising prices for farm products in 1945, 1946 and 1947 held annual net returns of families operating 14 important types of farms well above prewar. For 11 of these types of farms net incomes in 1947 were of record high and well above those in 1946 or 1945 (table 1).

Production, prices, and costs alike have moved up rapidly since the late thirties and the early forties. Costs moved upward more slowly during the war than did prices, but they are still going up. This is particularly true on some types of farms and in some areas. Costs also are likely to remain at higher levels in a period of declining farm prices.

With higher yields on larger acreages and with more livestock, total production moved up continually from prewar to 1946 when it was generally about 30 percent higher than in prewar. In 1947 production per farm was slightly higher than in 1946. But, considerable variation occurred among crops and regions. For example, farmers in the winter wheat area harvested their largest crop in history, whereas on Corn Belt farms the corn outturn was the smallest since 1940.

Prices received by farmers in 1946 for products sold were more than double prewar and by 1947 they were nearly triple prewar levels. Despite reduced production of crops and livestock in 1947 on some types of farms (particularly Corn Belt farms) prices received for products sold increased sufficiently to more than offset these declines in production. Gross incomes were higher in 1947 than in 1946 on 12 of the 14 types of farms. Cash receipts were a record high in 1947 on all of the 14 types.

Prices paid by farmers for the goods and services they use in production also have increased since 1937-41 (table 2). In 1947 these prices averaged about 60 percent higher than in 1937-41 on Corn Belt and spring wheat farms, 45 percent higher on winter wheat farms, and about 80 percent higher on dairy and cotton farms. (Prices and wage rates paid were little higher in 1946 than in 1945, but they advanced about 20 percent from 1946 to 1947; the largest increase in any year.) In addition, farmers have bought more machinery, gasoline, oil, tires and fertilizer and generally have hired more labor in order to increase production. This has meant greater expenditures in terms of both quantity and value. Quantity or volume of cash goods purchased on these farms in 1947 ranged from about 10 percent above prewar 1937-41 on Mississippi Delta cotton farms to 45 percent on winter wheat farms. Total cash expenditure in 1947 ranged from about 75 percent above 1937-41 on cash-grain and hog-beef raising farms in the Corn Belt to 130 percent on central New York dairy farms.

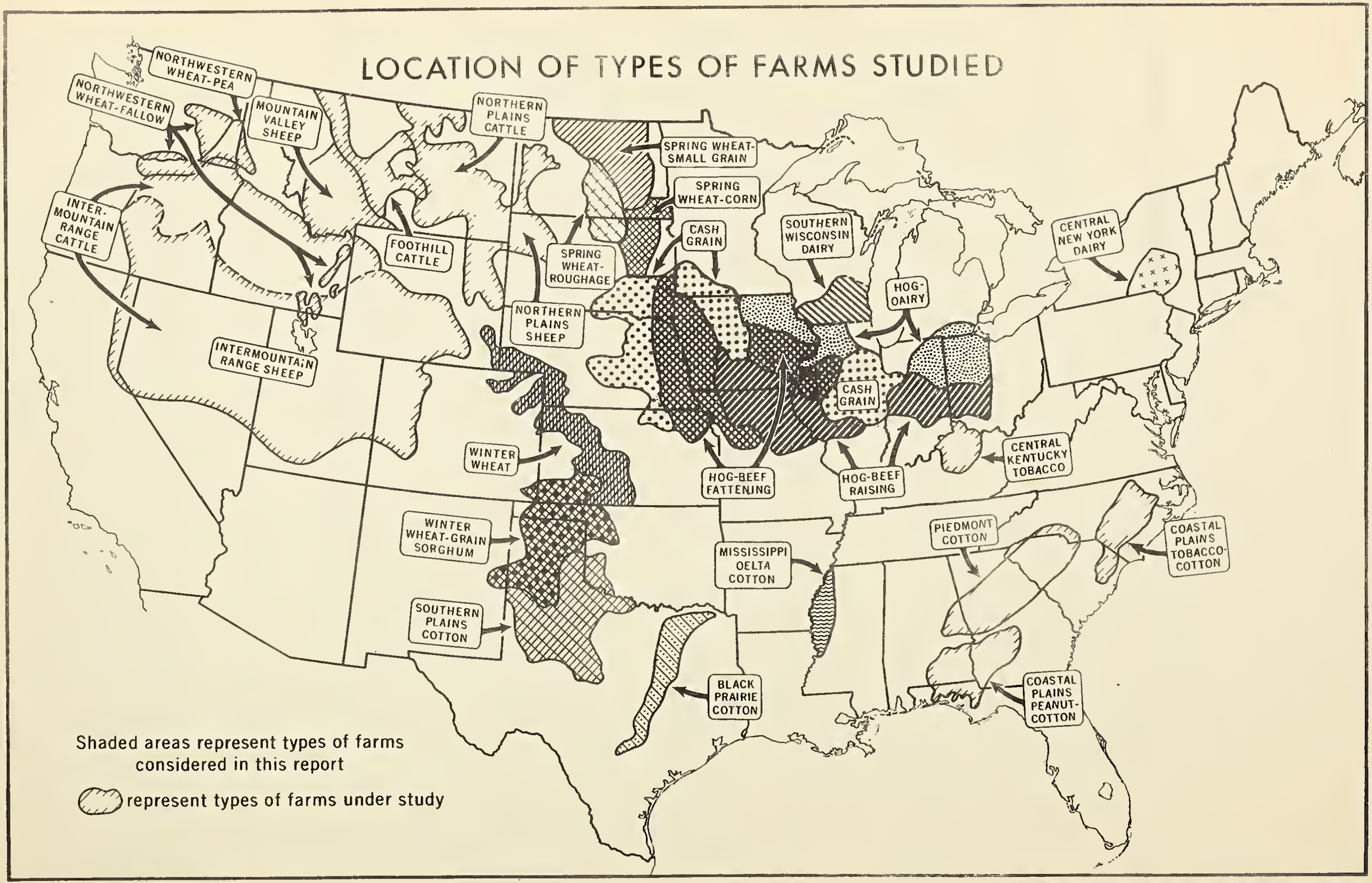
Operating expenses on these 14 types of farms now vary from 80 to 160 percent above those of 1937-41 and 2 to 40 percent above those of 1946. Even so, operators of these farms now are more efficient producers than in prewar days and they have stretched gross incomes farther. The biggest gains in this respect have been made on the larger crop farms where mechanization and technological developments have enabled farmers to increase the size of their business and to reduce labor and other production inputs per unit of output. In 1947 it required only 13 cents out of each dollar of gross farm income on winter wheat farms to meet operating expenses compared with nearly 50 cents in 1937-41. But on central New York dairy farms it required 48 cents out of each dollar of gross farm income to meet operating expenses in 1947 compared with 56 cents in 1937-41 (figure 3). Costs of feed and of labor are important on these dairy farms and both have been high in recent years. As a result, operating expenses per dollar of gross farm income actually increased about 10 percent on these dairy farms from 1945 and 1946 to 1947 (table 2).

Returns to labor (all labor including operator, family, and hired) on an hourly basis mounted even more rapidly in the war and postwar period than did either gross or net farm earnings. Many factors of management and prices and costs are reflected in hourly returns to labor. Labor-saving machines, better crop rotations, improved crop varieties, better livestock and other good farming practices have yielded almost continually increasing returns where put into use on operating units of appropriate size.

Most of these farms used more total labor during the war and postwar years than they did in the prewar years, but they have used much less labor per unit of output. For example, winter wheat farms which are among the more highly mechanized used about 7 percent more total labor in 1947 than in 1937-41 but total

---

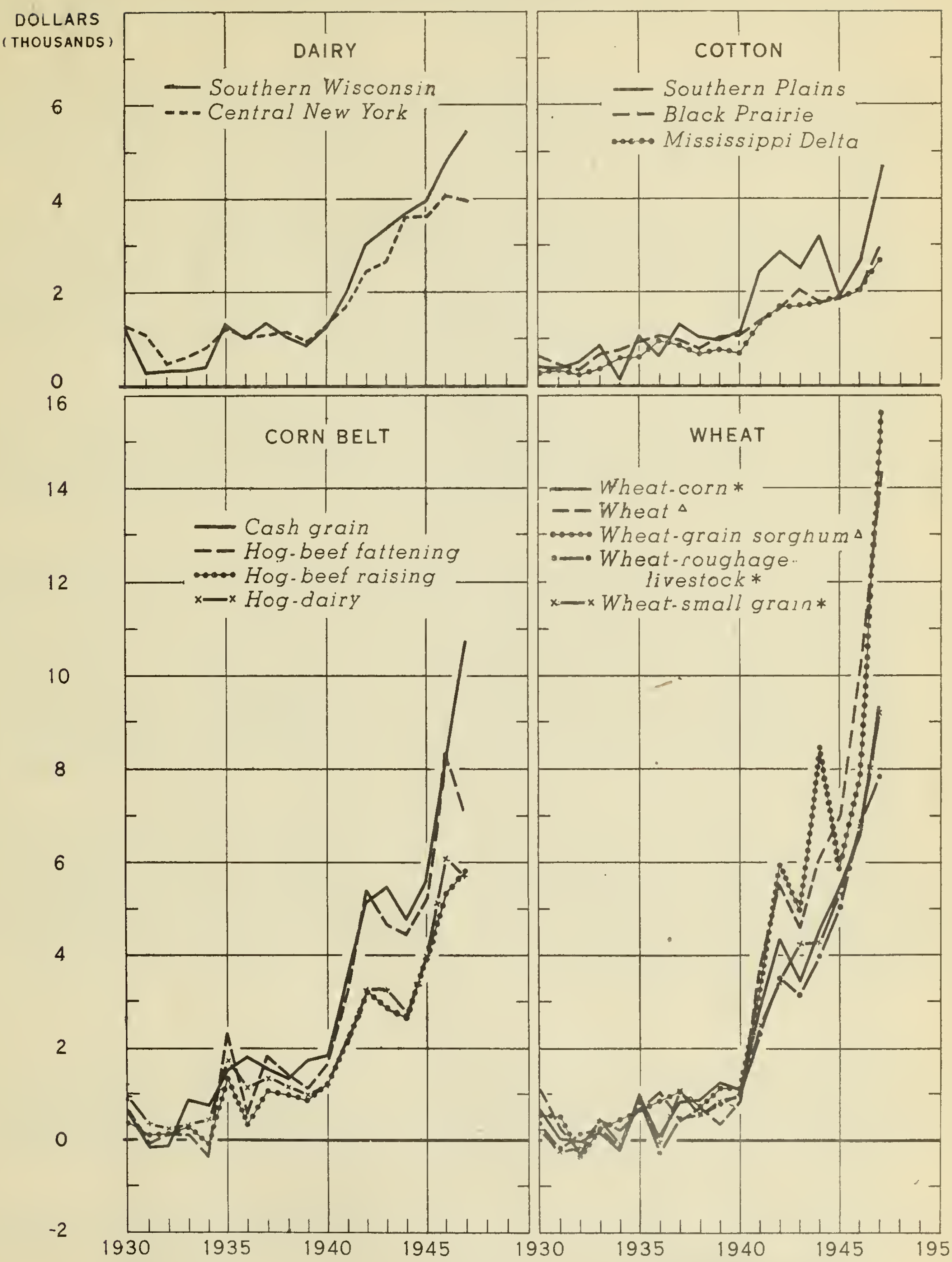
[1] This report deals specifically with performances on 14 types of commercial family-operated farms. It is another in a series which presents information on shifts in production and changes in farm organization, practices, methods and efficiencies in production, mechanization, technological developments, prices, costs and returns on farms by type, size and location. It brings to date the summary information on the 14 types of farms presented in F.M. 55, "Typical Family-Operated Farms, 1930-45, Adjustments, Costs and Returns," April 1946. The information in these reports are averages of large groups of common types and sizes of farms in designated areas. The information is obtained from well defined homogeneous groups of farms selected by accepted sampling methods. The averages, therefore, are representative of the operations and returns on the rank and file of specified types of farms. Audrey Illig, Isabel Jenkins, and Birdie Kirk were largely responsible for the statistical computations.



U.S. DEPARTMENT OF AGRICULTURE NEG. 45773 BUREAU OF AGRICULTURAL ECONOMICS

Figure 1.- Studies have been completed for 14 types of farms and results from those of the 12 other types indicated will soon be available. It is planned that all analyses will be kept current to provide a continuing source of information on the various details of farm organization, operation, income and costs. Other types of farms are found in these geographic areas, but in each case the type studied is the most important one.

FARM EARNINGS
OPERATOR'S NET FARM INCOME, FAMILY-OPERATED FARMS, BY TYPE, 1930-47



* SPRING WHEAT AREA △ WINTER WHEAT AREA DATA FOR 1947 ARE PRELIMINARY

U. S. DEPARTMENT OF AGRICULTURE NEG. 45745 BUREAU OF AGRICULTURAL ECONOMICS

Figure 2.- Continued high production and favorable prices for farm products have carried annual earnings of farm families rapidly upward since 1940, despite increasingly higher prices and expenditures for farm labor, machinery, feed, seed, fertilizer, building materials and supplies. Record high prices with near record production in 1947 carried operators' returns on most farms to a record high.

production in 1947 (a record year) was over two and one-half times the 1937-41 average. Of course, if a bad crop year should come in which crop yields are low but a crop is harvested this high unit output per hour of man labor would change materially. For example, cash-grain farmers in the Corn Belt used about the same total amount of labor in 1946 for a record output as they did for the output in 1937-41 which was only 75 percent as large. In 1947, however, the total amount of labor was only 5 percent less than in 1946 even though production in 1947 (because of drought) was slightly more than two-thirds the 1946 production.

Although livestock farmers in recent years have increased total production and have adopted improved management practices, they have not been able to increase production so spectacularly and to reduce per unit labor requirements so greatly as have the highly mechanized crop farmers. Of course, favorable weather has not had nearly the effect on production per milk cow, per hog, or per beef as it has had on crop yields. Therefore, it has not greatly affected labor per unit output.

To grow and harvest an acre of corn by the methods used on cash-grain farms in 1946 required 8.0 hours of man labor; the yield was 56 bushels. In 1947 it required 7.8 hours and the yield was only 36 bushels. In 1937-41 it required 10.6 hours and the yield was 47 bushels per acre. Winter wheat farmers used 2.5 hours of man labor to grow and harvest an acre of wheat in 1937-41 and 2.1 hours in 1947. The yield in 1947 was 21 bushels compared with 10.4 bushels in 1937-41. The dairy farmers of central New York, on the other hand, spent 142 hours of labor per milk cow on their herds in 1947 as compared with 140 hours per milk cow in 1937-41. Labor required to produce 100 pounds of milk on those dairy farms in 1947 was 2.2 hours compared with 2.3 hours in 1937-41.

Returns on farm investment have moved upward for nearly a decade and they are now at relatively high levels. These returns in 1947, though comparatively high, did not conform to the usual pattern of the war and postwar period. Instead of the persistent increase, returns declined on all of the Corn Belt farms and the wheat-roughage livestock farms, and they tended to level off and decline on dairy farms. Record production of wheat and near-record production of cotton together with record prices for these commodities continued to hold returns on farm investment on these farms at high levels.

Land rentals likewise have moved upward since the late thirties and this has encouraged farmers and other investors to bid up the price of land. In 1947 land values on all but the spring wheat farms were the highest on record and about double those in the prewar years. The decline in mortgage indebtedness which has been under way for some time on these farms appears to have ceased. There was a slight reduction in mortgage indebtedness from 1946 to 1947 on some farms and a striking increase on others. Large mortgage debts represent heavy fixed costs to owners for interest and principal payments, and high rentals represent heavy fixed costs to tenants. If farm incomes and prices of farm products decline, these costs probably would become burdensome. In recent years farmers seem to have broken all previous records. War and postwar demands for food and fiber pushed farm prices continuously upward. Despite shortages of farm labor and scarcity of machinery and supplies, farmers' incentive was high for greater and greater production. Mother nature also was generous. Crop failure and abandonment were negligible and yields were high. Returns to farmers mounted year after year.

A sobering effect, however, is the fact that farmers' incomes vary greatly from year to year. Farmers remember the 1930's when their annual returns usually averaged well below $1,000. In some years out-of-pocket expenditures actually exceeded income. In the 11-year period from 1930-40, farmers in the spring wheat area lost money in 5 years of operation. During the period 1930-40 returns to operators and their families for their labor and management and for their investment averaged less than $300 on wheat farms and $700 on Corn Belt, dairy and cotton farms. Considerable more variation in incomes also were found on wheat farms. Continued increases in production costs would mean a sharp drop again in incomes if prices decline.

Corn Belt Farms

The four types of Corn Belt farms covered in these analyses represent an important segment of Corn Belt farming and are typical of the operations and returns on the rank and file of commercial family-operated farms of the respective type in the area. These farms are important in western Ohio and in the Missouri and upper Mississippi River valleys and adjacent areas. The land is productive and a high proportion is tilled. Each farm type has some diversity of enterprises; from 30 to 90 percent of the cash receipts are from the livestock enterprises.

Net returns on these farms moved upward rapidly with the coming of the war and the increased demand for food and fiber. Production of both crops and livestock has been stepped up tremendously on these Corn Belt farms. In 1946 record crop yields on the largest acreage of cropland harvested on record brought crop production to its highest peak.

Total cropland harvested in 1947 was below the record acreages of 1946 but it was well above the long-time average (table 3). Harvested acreage of corn in 1947 ranged from 16 to 20 percent above that of 1937-41, but due to unfavorable weather and low yields in 1947, production was about equal to that of 1937-41. Cash-grain farmers suffered the greatest losses and harvested 7 percent less corn in 1947 than in 1937-41. Hog-beef fattening farmers, at the other extreme, harvested

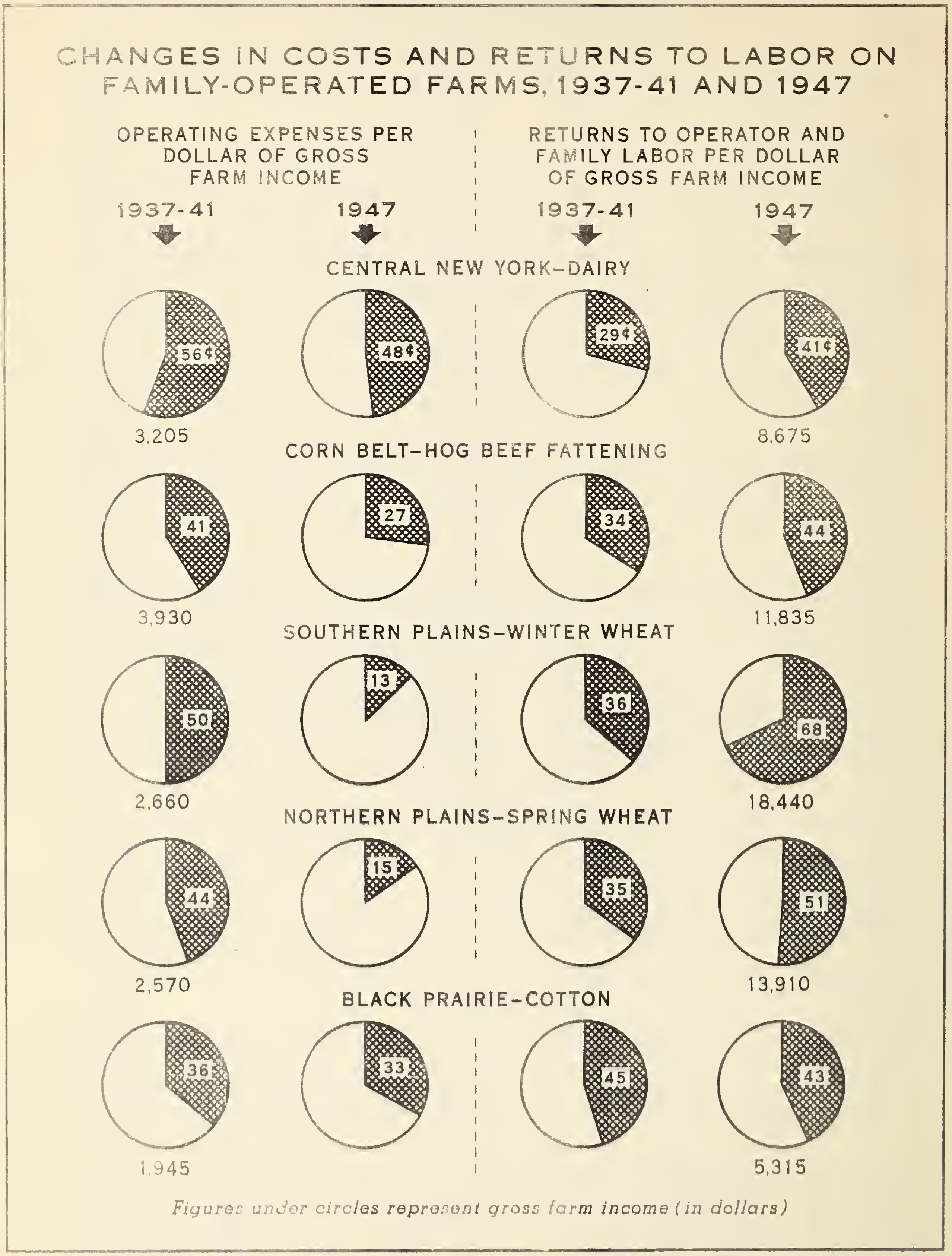
Table 1.- FARM RETURNS AND COSTS, family-operated farms, by type, 1945, 1946 and 1947, with comparisons 1/

Type of farm and location	Gross Farm Income				Operator's Net Farm Income 2/				Return per Hour to all Labor 3/				Cost per Unit of Production: Current Price				Cost per Unit of Production: Excluding Price Change 4/			
	1937-41	1945	1946	1947	1937-41	1945	1946	1947	1937-41	1945	1946	1947	1937-41	1945	1946	1947	1937-41	1945	1946	1947
	Dol.	Dol.	Dol.	Dol.	Dol.	Dol.	Dol.	Dol.	Dol.	Dol.	Dol.	Dol.	Index Numbers (1930-44 = 100)							
Corn Belt Farms:																				
Cash grain	4,508	10,264	13,462	16,031	2,006	5,583	8,049	10,696	.38	1.10	1.60	2.34	88	143	153	213	83	76	72	101
Hog-beef fattening	3,831	9,273	12,879	11,838	1,837	5,245	8,334	7,091	.32	.93	1.53	1.28	96	131	150	197	99	78	77	100
Hog-beef raising	2,298	5,971	7,531	7,815	1,256	3,913	5,309	5,758	.27	.83	1.15	1.55	90	139	159	201	92	78	81	108
Hog-dairy	2,901	7,140	9,427	9,320	1,399	3,960	6,096	5,710	.25	.71	1.10	1.03	94	156	161	207	95	85	81	101
Dairy Farms:																				
Central New York	3,207	7,379	7,966	8,677	1,250	3,627	4,028	3,989	.23	.76	.86	.85	92	148	151	187	98	98	91	103
Southern Wisconsin	3,000	7,430	8,446	9,633	1,316	3,952	4,764	5,427	.26	.85	1.06	1.19	93	141	162	175	98	92	100	99
Winter Wheat Farms (So. Plains):																				
Wheat	2,659	9,704	13,747	18,442	1,210	6,978	10,361	14,342	.37	2.00	3.10	4.44	110	106	104	120	116	58	49	52
Wheat-grain sorghum	3,135	9,333	12,035	21,941	1,462	5,841	7,892	15,617	.46	1.64	2.35	4.72	95	125	132	127	97	65	63	44
Spring Wheat Farms (No.Plains):																				
Wheat-corn-livestock	2,654	8,190	9,480	13,088	1,382	5,476	6,594	9,315	.32	1.16	1.48	2.13	84	141	168	193	85	65	74	72
Wheat-small grain-livestock	2,571	8,775	10,160	13,907	1,188	5,349	6,745	9,225	.29	1.16	1.58	2.23	79	128	161	183	73	51	63	57
Wheat-roughage-livestock	2,009	7,529	9,456	10,690	1,047	5,067	6,880	7,862	.27	1.06	1.47	1.74	85	116	139	173	86	55	62	72
Cotton Farms:																				
Southern Plains	2,611	3,581	4,602	7,781	1,396	1,938	2,698	4,684	.37	.61	.88	1.50	87	187	210	195	91	108	104	81
Black Prairie, Texas	1,946	3,523	3,820	5,317	1,058	1,857	2,054	2,936	.24	.44	.50	.71	88	205	254	248	93	112	129	106
Delta Area, Mississippi	1,300	2,700	2,868	3,729	864	1,919	2,034	2,693	.24	.54	.58	.73	93	144	171	176	93	80	85	77

Table 2.- PRODUCTION, YIELDS and PRICES, family-operated farms, by type, 1945, 1946 and 1947, with comparisons 1/

Type of farm and location	Total Production per Farm				Crop Yield Index				Prices Received for Products Sold				Prices Paid for Production Items				Operating Expense per Dollar of Gross Farm Income			
	1937-41	1945	1946	1947	1937-41	1945	1946	1947	1937-41	1945	1946	1947	1937-41	1945	1946	1947	1937-41	1945	1946	1947
	Index Numbers (1930-44 = 100)																Dol.	Dol.	Dol.	Dol
Corn Belt Farms:																				
Cash grain	111	135	147	105	112	120	128	97	95	178	210	278	97	127	129	147	.34	.23	.18	.16
Hog-beef fattening	97	145	150	119	106	137	148	117	99	167	184	239	98	142	145	166	.41	.29	.22	.27
Hog-beef raising	103	143	145	102	111	139	155	108	96	178	211	275	97	133	133	145	.37	.25	.20	.19
Hog-dairy	103	130	137	110	108	123	145	123	94	184	206	259	96	150	153	175	.43	.35	.26	.30
Dairy Farms:																				
Central New York	103	118	126	110	100	130	120	114	92	181	187	211	96	150	165	186	.56	.44	.43	.48
Southern Wisconsin	102	125	117	122	102	136	119	125	93	186	212	244	97	150	157	180	.46	.35	.32	.32
Winter Wheat Farms (So. Plains):																				
Wheat	78	165	197	204	86	145	167	167	97	188	217	276	100	119	123	144	.50	.18	.14	.13
Wheat-grain sorghum	80	139	149	221	91	115	126	171	94	191	231	288	98	125	127	147	.42	.21	.18	.12
Spring Wheat Farms(No. Plains):																				
Wheat-corn-livestock	100	154	134	144	105	148	128	122	96	190	239	319	96	132	135	159	.40	.21	.18	.16
Wheat-small grain -livestock	100	174	137	154	105	161	128	134	95	192	250	340	96	138	131	161	.44	.21	.17	.15
Wheat-roughage-livestock	85	179	160	142	91	170	186	158	99	186	245	315	96	147	146	160	.47	.25	.19	.18
Cotton Farms:																				
Southern Plains	106	81	82	119	107	86	89	104	89	178	222	271	96	133	145	178	.35	.35	.29	.27
Black Prairie, Texas	105	92	76	98	111	86	73	93	87	187	242	268	93	148	153	178	.36	.38	.36	.33
Delta Area, Mississippi	110	122	114	129	110	127	106	118	88	182	215	236	93	153	154	171	.22	.17	.15	.14

1/ Information for the years 1930-44 inclusive is given in F.M. 55 "Typical Family-Operated Farms, 1930-45, Adjustments, Costs and Returns." 2/ Operator's net farm income is the return during the calendar year to the operator and unpaid members of his family for their services on the farm and for the use of their capital and land after paying current production expenses, rent and interest on mortgage debt and taking account of the value of farm produce consumed on the farm, a nominal rental on farm dwelling and changes in inventories. 3/ Net return above expenses of current farm production including an allowance for the use of land and capital used in production but excluding hired labor, operator and family labor and management divided by the total hours of all labor used on the farm during the year. 4/ Based on 1935-39 dollars.



U. S. DEPARTMENT OF AGRICULTURE NEG. 46888 BUREAU OF AGRICULTURAL ECONOMICS

Figure 3.- High gross returns and low operating costs contribute to high returns to labor and management. Labor-saving machines, better crop rotations, improved crop varieties, better livestock and other improved farming practices have increased total output and net returns where put into use on operating units of appropriate size.

7 percent more in 1947 than in 1937-41. The 1947 crop was about 63 percent as large as the 1946 crop on both farm types. Yields of corn in 1947 were well below those of 1946 and ranged from 78 percent of 1937-41 on cash-grain farms to 91 percent on hog-dairy farms. Yields of other crops also were relatively lower on cash-grain farms than on other types of Corn Belt farms. In 1947 the index of crop yields (1930-44 = 100) was 15 points below the 1937-41 average on cash grain farms. On the other hand, the crop yield index on hog-beef fattening farms was 11 points higher in 1947 than in 1937-41.

The increase in cropland harvested on these farms has been taken up largely by an increase in the acreage of corn. On the average acreages of small grain and hay have changed very little since 1940. During the war the acreage in soybeans increased, but in 1946 and 1947 the acreage was below the average for the war years. In 1946 and 1947 the acreage of soybeans on cash-grain farms (the largest producers of soybeans) was 20 percent below the 1942-44 average.

Cattle numbers in 1947 were slightly higher than in 1946 and they were well above the prewar average. Hog numbers in 1947 on all but the hog-beef fattening farms were slightly below the number in 1946 and not far different from the 1937-41 average. On hog-beef fattening farms (the largest hog producers) hog numbers were slightly higher in 1947 than in 1946 and a third higher than the prewar average. Total production of livestock and livestock products in 1947 was higher than in 1946 but about average for the last 4 years.

Despite unfavorable crop yields and about average production of livestock returns on Corn Belt farms were relatively high in 1947. Cash-grain and hog-beef raising farmers had the largest incomes on record. Operators' incomes on hog-dairy and hog-beef fattening farms were slightly lower in 1947 than in 1946 but they were considerably higher than in previous years. Total production in 1947 on cash-grain farms was 71 percent of 1946 but prices received were 34 percent higher and prices paid were 16 percent higher in 1947 than in 1946. As a result, gross farm income was nearly 20 percent higher in 1947 than in 1946 (table 4).

Total production in 1947 on hog-beef fattening and hog-dairy farms was about 80 percent of that in 1946. Production in 1947 on hog-beef raising farms was about 70 percent of that in 1946.

Corn Belt farms are fairly well mechanized, which means that cash costs are high and cannot be deferred or reduced materially when production is low. For example, in 1947 production on cash-grain farms was about 30 percent below the production in 1946, but operating expense per unit of production was about 50 percent higher.

Dairy Farms

The dairy farms for which data are presented here represent average commercial family-operated dairy-type farms in central New York and southern Wisconsin. (See fig. 1.) As such, they represent production, costs, returns, and related data on the rank and file of commercial dairy-type farms ranging from small family-operated units to the largest family-operated units in each area. More than 60 percent of the total classified farms in the central New York area are dairy farms of which over 95 percent are commercial family-operated units. In the southern Wisconsin area over 55 percent of the total farms are dairy-type farms of which over 85 percent are commercial family-operated units.

Dairy farms in central New York average about 145 acres in size. Less than 40 percent is cropland and about 85 percent of this is devoted to hay and silage. The average dairy herd is composed of about 20 milk cows with 8 or 10 stock animals for replacement. These farms have little other livestock except poultry. Although these farmers produce about all the roughage for their livestock, they buy practically all of the concentrate feeds. In 1947 purchases of feed amounted to 56 percent of the total cash expenditures (table 5).

The average family-operated dairy farm in southern Wisconsin is slightly more diversified, has more cropland, about as many milk cows, more hogs, and a few more poultry than the average central New York dairy farm. Around 60 percent of the total cash receipts are from the dairy enterprise on southern Wisconsin farms, compared with 80 percent on central New York dairy farms. Wisconsin dairy farmers also grow all of their feed, except high protein feeds.

Returns to dairy farmers in both areas also went up with the tide that carried returns to most farmers to new levels during the war and postwar years. Operators' returns in 1947 on both groups of farms were well above prewar levels and they were the highest on record for operators of southern Wisconsin dairy farms. Operators' returns in 1947 on central New York dairy farms were only a few dollars (less than 1 percent) below the record level obtained in 1946 (table 6).

Feed and labor have come high in recent years and the amount spent for these on New York dairy farms has been considerable. Feed prices and wage rates were at record highs in 1947; 15 percent and 10 percent higher respectively than in 1946. The combined index of prices and wages paid on these central New York dairy farms was 15 percent higher in 1947 than in 1946. Prices received for products sold, however, were only 13 percent higher in 1947 than in 1946. During the last 2 years production costs have risen more than have prices received on these farms. This, together with slightly lower

TABLE 3.- LAND USE, LIVESTOCK NUMBERS AND DISTRIBUTION OF INCOME AND EXPENSE, FAMILY-OPERATED CORN BELT FARMS BY TYPE, 1937-41 AVERAGE AND 1945-47

Item	Unit	CORN BELT FARMS															
		Cash Grain				Hog-Beef Fattening				Hog-Beef Raising				Hog-Dairy			
		1937-41	1945	1946	1947	1937-41	1945	1946	1947	1937-41	1945	1946	1947	1937-41	1945	1946	1947
Total land in farm	Acres	217	232	235	235	195	212	213	213	166	180	182	185	134	142	144	144
Proportion of farm land in:																	
Cropland harvested	Percent	77	80	79	77	65	66	67	66	51	54	53	50	60	65	65	62
Idle and failure	do.	7	5	6	5	5	5	4	3	7	3	4	4	6	2	2	4
Pasture and other land	do.	16	15	15	18	30	29	29	31	42	43	43	46	34	33	33	34
Crops harvested:																	
Corn	Acres	77.1	90.9	94.9	90.7	60.3	74.4	75.4	72.4	34.3	42.7	43.5	39.8	33.5	41.0	42.0	38.7
Small grain	do.	49.4	42.5	46.3	44.2	35.3	32.4	35.4	34.7	25.2	25.2	25.3	24.4	26.2	27.0	27.6	26.7
Soybeans	do.	25.7	38.7	31.5	33.3	2.7	5.1	3.4	4.1	3.5	6.8	4.9	6.3	2.2	4.8	3.8	3.7
Hay	do.	13.5	12.8	12.9	13.7	28.4	29.3	29.4	29.6	21.3	21.8	22.9	22.2	18.4	19.8	20.0	20.6
Crop yield (per harvested acre):																	
Corn	Bushels	47.2	50.0	56.0	36.7	42.9	50.0	57.6	37.9	36.3	45.0	55.6	31.8	49.5	52.0	63.4	45.0
Oats	do.	39.3	43.0	40.2	34.0	34.8	45.0	42.4	34.8	30.9	38.0	37.5	26.4	35.2	35.0	46.6	37.9
All crops (index 1930-44 = 100)	Percent	112	120	128	97	106	137	148	117	111	139	155	108	108	123	145	123
Livestock on farm January 1:																	
All cattle	Number	15.1	19.1	18.0	18.7	36.8	50.0	46.5	47.0	25.2	32.3	29.7	28.2	18.4	21.6	19.9	20.1
Milk cows	do.	4.6	5.9	5.4	5.4	3.4	4.8	4.5	4.3	4.8	6.1	5.9	5.5	11.5	13.4	12.6	12.3
Hogs, all ages	do.	27.6	31.1	36.0	30.7	47.3	55.3	62.9	63.1	20.3	23.6	25.2	23.7	32.7	34.9	36.4	34.7
Poultry	do.	111	127	126	118	112	129	129	120	95	115	114	107	112	133	132	124
Workstock	do.	2.0	1.7	1.5	1.3	4.2	3.0	2.6	2.2	3.6	3.0	2.6	2.2	3.2	2.2	1.9	1.6
Farms with tractors	Percent	86	96	100	100	71	90	96	100	34	54	61	65	50	70	77	83
Proportion of cash receipts from:																	
Corn	Percent	35	38	38	44	1	12	12	13	7	13	25	29	3	3	11	16
Soybeans	do.	11	16	16	12	1	2	2	1	3	3	4	4	1	3	3	2
Other crops	do.	11	7	11	9	2	5	4	4	4	5	5	5	4	5	5	6
Hogs	do.	18	17	20	19	34	33	39	40	27	29	25	24	34	30	32	34
Cattle	do.	7	8	5	7	45	36	33	34	26	23	19	21	11	11	8	9
Other livestock	do.	2	2	1	1	3	2	1	1	7	5	5	3	5	4	4	3
Livestock products	do.	9	11	8	7	8	9	8	6	18	21	16	13	37	43	36	29
Government payments	do.	7	1	1	1	6	1	1	1	8	1	1	1	5	1	1	1
Proportion of cash expenditures for:																	
Feed	do.	6	7	8	9	12	9	10	11	9	9	10	12	8	7	9	10
Labor	do.	7	15	11	7	14	26	23	21	7	19	12	-	23	42	38	37
Power and machinery	do.	47	41	44	45	35	31	34	33	44	40	44	48	36	27	28	27
General farm	do.	30	24	25	27	23	17	18	19	26	17	19	23	21	13	14	15
Miscellaneous	do.	10	13	12	12	16	17	15	16	14	15	15	17	12	11	11	11

TABLE 4.- INVESTMENT, INCOME AND RELATED FACTORS, FAMILY-OPERATED CORN BELT FARMS, BY TYPE, 1937-41 AVERAGE AND 1945-47 1/

Item	Unit	CORN BELT FARMS															
		Cash Grain				Hog-beef Fattening				Hog-Beef Raising				Hog-Dairy			
		1937-41	1945	1946	1947	1937-41	1945	1946	1947	1937-41	1945	1946	1947	1937-41	1945	1946	1947
Total land in farm	Acres	217.0	232.0	235.0	235.0	195.0	212.0	213.0	213.0	166.0	180.0	182.0	185.0	134.0	142.0	144.0	144.0
Proportion rented	Pct.	68	67	67	67	57	57	57	57	50	49	49	49	48	48	48	48
Cropland harvested	Acres	166	185	186	182	127	141	144	141	84	96	97	93	80	93	93	90
Total labor used	Hours	4,062	4,033	4,023	3,853	4,842	4,846	4,748	4,663	3,789	4,026	3,834	3,058	5,173	5,634	5,307	5,317
Labor hired	do.	516	700	524	354	1,096	1,450	1,249	1,164	302	590	335	-	1,303	2,150	1,808	1,818
Total investment	Dols.	28,619	45,971	52,213	60,380	20,847	37,812	42,376	49,794	10,447	21,478	24,279	28,529	13,533	23,236	26,754	31,383
Land and buildings	do.	23,841	36,424	42,065	47,705	15,767	26,500	30,672	34,293	7,220	14,760	17,108	19,425	9,622	15,904	18,864	21,024
Machinery and equipment	do.	1,566	2,403	2,537	2,920	1,298	1,940	2,102	2,413	811	1,333	1,488	1,725	1,076	1,588	1,737	2,074
Livestock	do.	1,232	2,432	2,641	3,499	2,399	4,911	5,271	7,573	1,700	3,236	3,346	4,259	1,740	3,146	3,248	4,324
Crops on hand	do.	1,980	4,712	4,970	6,256	1,383	4,461	4,331	5,515	716	2,149	2,337	3,120	1,095	2,598	2,905	3,961
Cash receipts	do.	3,705	9,169	11,168	14,965	3,284	8,694	9,622	13,429	1,693	5,123	5,658	7,902	2,368	6,215	6,860	9,335
Cash expenditures	do.	1,542	2,326	2,484	2,761	1,770	2,989	3,186	3,652	888	1,560	1,551	1,538	1,295	2,550	2,548	2,859
Net cash farm income	do.	2,163	6,843	8,684	12,204	1,514	5,705	6,436	9,777	805	3,563	4,107	6,364	1,073	3,665	4,312	6,476
Value of perquisites	do.	333	575	547	644	339	569	596	702	303	551	554	652	318	563	591	675
Net change in inventory	do.	542	532	1,858	579	532	346	3,010	-1,843	368	379	1,397	-669	284	415	2,038	-643
Net farm income	do.	3,038	7,950	11,089	13,427	2,385	6,620	10,042	8,636	1,476	4,493	6,058	6,347	1,675	4,643	6,941	6,508
Rent and interest paid by operator	Dols.	1,032	2,367	3,040	2,731	548	1,375	1,708	1,545	220	580	749	589	276	683	845	798
Operator's net farm income	do.	2,006	5,583	8,049	10,696	1,837	5,245	8,334	7,091	1,256	3,913	5,309	5,758	1,399	3,960	6,096	5,710
Operator's net cash farm income	do.	1,087	4,360	5,552	9,373	923	4,236	4,652	8,152	562	2,934	3,315	5,728	768	2,919	3,416	5,627
		Allocation of net farm income															
Land and buildings (net rental)	Dols.	1,348	3,374	4,410	3,955	762	2,237	2,855	2,576	332	1,094	1,460	1,133	443	1,311	1,670	1,577
Working assets (current interest rate)	do.	262	496	518	646	279	588	597	791	177	349	366	464	215	381	402	528
Total investment	do.	1,610	3,870	4,928	4,601	1,041	2,825	3,452	3,367	509	1,443	1,826	1,597	658	1,692	2,072	2,105
Operator and family labor	do.	1,428	4,080	6,161	8,826	1,344	3,795	6,590	5,269	967	3,050	4,232	4,750	1,017	2,951	4,869	4,403
Operator's labor	do.	1,163	3,665	5,627	8,244	1,039	3,349	6,056	4,687	731	2,584	3,698	4,425	682	2,461	4,335	3,821
All labor	do.	1,543	4,429	6,439	9,030	1,564	4,517	7,259	5,945	1,030	3,344	4,414	4,750	1,307	4,022	5,837	5,464
Percentage return to investment	Pct.	5.7	8.4	9.4	7.6	5.0	7.5	8.1	6.8	4.9	6.7	7.5	5.6	4.8	7.3	7.7	6.7
Return per hour to all labor used	Dols.	.38	1.10	1.60	2.34	.32	.93	1.53	1.28	.27	.83	1.15	1.55	.25	.71	1.10	1.03
		Index numbers (1930-44=100)															
Gross farm income	Pct.	99	226	296	353	97	227	316	290	100	261	329	341	97	238	315	311
Operator's net farm income	do.	98	273	394	523	99	291	463	394	107	334	453	491	97	276	425	398
Total production	do.	111	135	147	105	97	145	150	119	103	143	145	102	103	130	137	110
Production per hour of man labor	do.	115	140	155	116	99	157	164	133	106	139	147	150	104	121	135	108
Operating expense per unit of production	do.	83	105	98	148	96	114	114	160	88	110	107	131	94	147	138	186
Total cost per unit of production	do.	88	143	153	213	96	131	150	197	90	139	159	201	94	156	161	207
Total input per unit of production	do.	83	76	72	101	99	78	77	100	92	78	81	108	95	85	81	101
Power and machinery used (quantity)	do.	99	133	138	144	98	123	129	133	99	135	144	149	103	128	137	146
Prices received for products sold	do.	95	178	210	278	99	167	184	239	96	178	211	275	94	184	206	259
Prices paid for production items	do.	97	127	129	147	98	142	145	166	97	133	133	145	96	150	153	175

1/ Information for the years 1930-44 inclusive is given in F.M. 55 "Typical Family-Operated Farms, Adjustments, Costs, and Returns, 1930-45."

TABLE 5.- LAND USE, LIVESTOCK NUMBERS, AND DISTRIBUTION OF INCOME AND EXPENSE, FAMILY-OPERATED DAIRY FARMS, AND WINTER WHEAT FARMS, BY TYPE, 1937-41 AVERAGE AND 1945-47

Item	Unit	DAIRY FARMS								WINTER WHEAT FARMS, SOUTHERN PLAINS							
		Central New York				Southern Wisconsin				Wheat				Wheat-Grain Sorghum			
		1937-41	1945	1946	1947	1937-41	1945	1946	1947	1937-41	1945	1946	1947	1937-41	1945	1946	1947
Total land in farm	Acres	142	145	145	145	120	122	122	122	566	600	605	605	636	690	695	700
Proportion of land in:																	
Cropland harvested	Percent	38	38	38	37	58	61	60	59	39	50	51	54	41	59	61	64
Idle and failure	do.	-	-	-	-	2	1	1	1	26	18	19	19	37	16	15	12
Pasture and other land	do.	62	62	62	63	40	38	39	40	35	32	30	27	22	25	24	24
Crops harvested:																	
Wheat	Acres	-	-	-	-	-	-	-	-	142.0	227.0	246.0	276.0	160.0	306.0	321.0	354.0
Corn	do.	7.1	7.5	8.1	7.3	21.8	26.2	26.2	25.7	19.0	19.2	14.5	11.5	2.0	2.8	2.8	2.8
Grain sorghum	do.	-	-	-	-	-	-	-	-	29.0	23.4	18.8	13.9	57.0	62.8	68.8	67.2
Other crops	do.	11.1	9.0	10.3	7.9	27.0	24.2	24.7	24.4	16.0	12.6	11.5	8.5	14.0	4.1	2.8	2.8
Hay and forage	do.	36.1	38.7	36.8	37.8	20.9	23.7	22.1	21.4	15.0	15.0	15.1	14.5	28.0	28.3	26.4	23.1
Crop yield (per harvested acre):																	
Wheat	Bushels	-	-	-	-	-	-	-	-	10.4	16.5	21.7	21.0	9.2	12.0	13.3	19.1
Corn or grain sorghum 1/	do.	-	-	-	-	40.7	52.0	58.9	53.9	10.2	14.0	16.8	16.6	13.4	16.0	17.1	20.5
All crops index (1930-44 = 100)	Percent	100	130	120	114	102	136	119	125	86	145	167	167	91	115	126	171
Livestock on farm, January 1:																	
All cattle	Number	25.5	29.5	28.0	27.7	23.1	28.0	27.7	28.3	19.3	36.6	36.2	32.3	16.1	35.2	32.4	31.1
Milk cows	do.	17.4	20.4	19.9	19.5	14.9	17.6	17.2	17.4	5.5	6.2	5.5	4.8	4.4	4.3	3.5	3.3
Hogs, all ages	do.	3.1	2.1	2.0	1.9	15.6	19.4	22.4	22.0	6.3	7.6	8.7	6.5	4.7	6.6	7.4	5.3
Poultry	do.	107	118	119	107	114	133	137	132	96	134	132	119	103	154	152	137
Workstock	do.	2.5	2.2	1.8	1.7	3.2	2.7	2.4	2.2	2.2	1.7	1.5	1.3	1.4	1.0	.9	.8
Farms with tractors	Percent	30	42	45	50	67	78	84	90	100	100	100	100	100	100	100	100
Proportion of cash receipts from:																	
Wheat	Percent	-	-	-	-	-	-	-	-	37	58	67	73	35	56	58	66
Other crops	do.	5	6	6	8	7	8	14	13	3	10	5	3	11	12	15	13
Cattle	do.	13	12	13	9	13	12	10	12	16	13	15	13	10	14	13	10
Other livestock	do.	1	1	1	1	20	19	17	24	8	5	4	3	5	4	4	4
Milk	do.	70	72	69	70	49	51	50	43	-	-	-	-	-	-	-	-
Other livestock products	do.	10	8	10	11	7	8	7	7	14	9	6	5	10	8	6	4
Government payments	do.	1	1	1	1	4	2	2	1	22	5	3	3	29	6	4	3
Proportion of cash expenditures for:																	
Feed	do.	44	50	52	56	9	11	12	12	2	5	4	4	2	4	4	4
Labor	do.	11	19	17	14	17	29	27	25	-	5	5	5	1	12	10	9
Power and machinery	do.	22	16	16	15	40	30	32	32	72	66	69	70	76	65	69	70
General farm	do.	16	10	10	11	24	16	18	19	22	17	16	16	17	12	11	11
Miscellaneous	do.	6	5	5	4	10	14	11	12	4	7	6	5	4	7	6	6

1/ Corn on Dairy farms; grain sorghum on Winter Wheat farms.

TABLE 6.- INVESTMENT, INCOME AND RELATED FACTORS, FAMILY-OPERATED DAIRY FARMS, AND WINTER WHEAT FARMS, BY TYPE, 1937-41 AVERAGE AND 1945-47 1/

Item	Unit	DAIRY FARMS								WINTER WHEAT FARMS, SOUTHERN PLAINS							
		Central New York				Southern Wisconsin				Wheat				Wheat-Grain Sorghum			
		1937-41	1945	1946	1947	1937-41	1945	1946	1947	1937-41	1945	1946	1947	1937-41	1945	1946	1947
Total land in farm	Acres	142.0	145.0	145.0	145.0	120.0	122.0	122.0	122.0	566	600.0	605.0	605.0	636	690.0	695.0	700.0
Proportion rented	Pct.	24	25	25	25	43	46	46	46	57	57	57	57	78	80	80	80
Cropland harvested	Acres	54	55	55	53	69	74	73	72	222	298	306	324	262	404	422	450
Total labor used	Hours	4,903	5,216	5,056	4,966	4,862	5,456	5,253	5,211	2,662	2,962	2,918	2,856	2,742	3,219	3,086	3,065
Labor hired	do.	829	1,171	1,011	921	1,089	1,507	1,303	1,261	15	144	153	167	91	399	348	347
Total investment	Dols.	9,339	14,552	15,497	17,703	13,214	20,272	21,307	24,853	17,512	31,835	34,189	41,024	17,965	33,804	35,490	42,282
Land and buildings	do.	5,495	7,250	8,120	9,280	8,933	12,078	12,810	14,274	14,472	24,000	26,015	30,855	14,981	25,530	27,800	32,900
Machinery and equipment	do.	988	1,477	1,566	1,762	1,149	1,582	1,700	1,974	1,743	2,723	2,893	3,447	1,838	2,868	3,087	3,550
Livestock	do.	2,141	4,058	4,171	5,162	1,918	3,688	4,030	5,271	930	2,532	2,784	3,197	747	2,351	2,443	2,982
Crops on hand	do.	715	1,767	1,640	1,499	1,214	2,924	2,767	3,334	367	2,580	2,497	3,525	399	3,055	2,160	2,850
Cash receipts	do.	2,732	6,625	6,999	7,567	2,508	6,412	7,484	9,028	1,997	9,081	12,253	16,029	2,498	9,746	10,646	18,025
Cash expenditures	do.	1,866	3,289	3,462	4,274	1,425	2,610	2,667	3,120	1,249	1,794	2,129	2,658	1,345	2,061	2,411	2,940
Net cash farm income	do.	866	3,336	3,537	3,293	1,083	3,802	4,817	5,908	748	7,287	10,124	13,371	1,153	7,685	8,235	15,085
Value of perquisites	do.	440	761	783	899	365	623	676	765	222	446	452	532	221	445	457	536
Net change in inventory	do.	109	-	218	286	190	399	339	-65	555	228	1,259	2,254	556	-787	1,168	3,739
Net farm income	do.	1,415	4,097	4,538	4,478	1,638	4,824	5,832	6,608	1,525	7,961	11,835	16,157	1,930	7,343	9,860	19,360
Rent and interest paid by operator	Dols.	165	470	510	489	322	872	1,068	1,181	315	983	1,474	1,815	468	1,502	1,968	3,743
Operator's net farm income	do.	1,250	3,627	4,028	3,989	1,316	3,952	4,764	5,427	1,210	6,978	10,361	14,342	1,462	5,841	7,892	15,617
Operator's net cash farm income	do.	719	2,895	3,080	2,865	801	3,050	3,863	4,768	402	6,250	8,600	11,501	647	6,113	6,200	11,268
		Allocation of net farm income															
Land and buildings (net rental)	Dols.	272	348	390	445	395	519	551	614	386	1,691	2,480	3,079	524	1,861	2,446	4,671
Working assets (current interest rate)	do.	219	394	384	438	235	426	433	540	177	423	417	519	174	447	392	478
Total investment	do.	491	742	774	883	630	945	984	1,154	563	2,114	2,897	3,598	698	2,308	2,838	5,149
Operator and family labor	do.	924	3,355	3,764	3,595	1,008	3,879	4,848	5,454	962	5,847	8,938	12,559	1,232	5,035	7,022	14,211
Operator's labor	do.	502	2,470	2,783	2,511	698	3,154	4,054	4,578	905	5,569	8,683	12,335	1,172	4,756	6,784	13,967
All labor	do.	1,132	3,981	4,364	4,198	1,250	4,642	5,569	6,223	966	5,937	9,046	12,681	1,253	5,275	7,263	14,466
Percentage return to investment	Pct.	5.2	5.1	5.0	5.0	4.8	4.6	4.6	4.6	3.2	6.6	8.5	8.8	3.9	6.8	8.0	12.2
Return per hour to all labor used	Dols.	.23	.76	.86	.55	.26	.85	1.06	1.19	.37	2.00	3.10	4.44	.46	1.64	2.35	4.72
		Index numbers (1930-44=100)															
Gross farm income	Pct.	93	213	230	250	93	231	263	300	79	289	409	549	78	233	301	548
Operator's net farm income	do.	88	255	284	281	91	274	330	376	70	403	599	829	73	293	396	784
Total production	do.	103	118	126	110	102	125	117	122	78	165	197	204	80	139	149	221
Production per hour of man labor	do.	102	110	121	107	103	113	109	115	87	163	199	210	88	129	144	216
Operating expense per unit of production	do.	96	151	151	195	97	144	161	177	117	68	63	74	98	85	88	69
Total cost per unit of production	do.	92	148	151	187	93	141	162	175	110	106	104	120	95	125	132	127
Total input per unit of production	do.	98	98	91	103	98	92	100	99	116	58	49	52	97	65	63	44
Power and machinery used (quantity)	do.	100	128	131	132	105	125	130	136	95	128	134	142	94	128	135	139
Prices received for products sold	do.	92	181	187	211	93	186	212	244	97	188	217	276	94	191	231	288
Prices paid for production items	do.	96	150	165	186	97	150	157	180	100	119	123	144	98	125	127	147

1/ Information for the years 1930-44 inclusive is given in F.M. 55 "Typical Family-Operated Farms, Adjustments, Costs, and Returns, 1930-45."

production in 1947 than in 1946, accounts for lower returns in 1947. Production of milk was about 3 percent higher than in 1946, but production of other items was lower; crop yields in 1947 being down 5 percent from 1946.

Total production on southern Wisconsin dairy farms was slightly higher in 1947 than in 1946 but it was slightly below the record production obtained in 1945. Yields and production of corn and small grains were lower in 1947 than in 1946, but yields and production of hay were higher. Production of milk and livestock was slightly higher in 1947 than in 1946. Both the index of prices received and the index of wage rates and prices paid increased 16 percent from 1946 to 1947. The increase from 1945 to 1946, however, was 14 percent for prices received and only 5 percent for wage rates and prices paid for cost goods.

Wheat Farms

Information is given here for 5 different groups of wheat farms: two winter wheat and three spring wheat. The winter wheat farms predominate in the western portions of Kansas and Nebraska and in the panhandles of Oklahoma and Texas. The spring wheat farms are common types in North and South Dakota (fig. 1). The information for each is representative of the great mass of family-operated farms of the respective types in the area. From 60 to 90 percent of the total classified farms in these areas are wheat farms, and nearly 95 percent of these are commercial family-operated units.

In 1947 winter wheat farmers in the Great Plains harvested the largest wheat crop and spring wheat farmers harvested a crop second only to the 1945 crop. Large wheat crops, plus better than average production of other crops and livestock, in 1947 gave operators of winter wheat farms from 2.5 to 3 times more production than prewar. Operators of spring wheat farms obtained about 50 percent more production in 1947 than in prewar years (tables 6 and 8).

Winter wheat farmers with specialized enterprises and highly mechanized operations have increased substantially the size of farms and production. They now operate about 15 to 20 percent more land than in 1930. In 1947, 80 percent of their cash receipts was from the sale of crops. Record harvested acreages in 1947, together with record prices and near record yields, gave operators of these farms the highest incomes on record. Operators' net farm income in 1947 was over 10 times the prewar average. Wheat sold from these farms in 1947 brought about $2.25 per bushel compared with 75 cents in 1937-41.

Prices received for products sold increased 25 percent from 1946 to 1947 on winter wheat farms compared with an increase of about 15 percent for prices paid, including wage rates. Tax rates and prices of fuel oil, machinery, and building materials advanced more from 1946 to 1947 than did wage rates on these farms. The total wage bill increased by less than 10 percent from 1946 to 1947 compared with an increase of over 25 percent in taxes, fuel oil, machinery, and building expenditures.

Winter wheat farmers are now much more efficient producers than they were formerly and hired labor is no longer an important cash expenditure. In 1947 these farmers produced 10 bushels of wheat with each hour of man labor compared with a little over 5.5 bushels in 1930. The average for the 5-year period 1943-47 was 8 bushels per hour of man labor compared with 4.3 bushels in 1930-34.

Despite the fact that production of wheat in 1947 on spring wheat farms was below that of 1945 or 1946, operator's income in 1947 was the highest on record. This is accounted for mostly by two factors: (1) Record prices for products sold and (2) above average production of livestock and crops other than wheat in 1947. Prices received in 1947 for products sold were more than 3 times the 1937-41 average and from 30 to 35 percent above those in 1946 (table 8). In 1947, wheat sold on these farms for $2.45 per bushel compared with $1.85 in 1946 and 75 cents in 1937-41.

On the average spring wheat farms are smaller, less mechanized and more diversified than are winter wheat farms (compare tables 5 and 6 with 7 and 8). In 1937-41, operators of spring wheat farms obtained nearly half of their income from livestock and livestock products and about 10 percent from crops other than wheat. The flax enterprise was an important cash enterprise during the war and in 1947 from 10 to 20 percent of the crop sales was from flax. Flax sold for over $6.00 per bushel in 1947. In 1937-41 it sold for about $1.50 per bushel. In 1947 the index (1930-44 = 100) of quantity of power and machinery averaged about 120 on spring wheat farms compared with 140 on winter wheat farms. The total average investment in 1947 in spring wheat farms was about $24,000, of which about $2,000 was in machinery and equipment. Estimated total investment on winter wheat farms in the same year was a little over $41,000, of which around $3,500 was in machinery and equipment (tables 6 and 8).

Wheat farmers are in relatively high risk areas. The average annual precipitation is comparatively light and highly variable. As a result, production and returns also are highly variable. For example, in the fall of 1931 winter wheat farmers seeded about 190 acres to wheat. During the winter and spring 44 acres were abandoned. That which was harvested averaged about 11 bushels per acre. In the fall of 1932 they seeded 200 acres to wheat but over half of it was abandoned before harvest the next summer. That which was harvested averaged only 7 bushels per acre. The crop in 1933 was about 42 percent of the 1932 crop. The crop in 1932 sold for 32 cents per bushel and farmers lost money. The crop of 1933 sold for 59 cents per bushel and the operator and his family received only 10 cents per hour for their labor and management. Other wheat farmers had similar experiences. These experiences are decidedly different than those during the 1940's.

Cotton Farms

The information presented here characterizes the operations, production and returns of common family-operated cotton farms in 3 important cotton producing areas--Southern Plains, Black Waxy Prairie of Texas, and the Delta of Mississippi (fig. 1). These commercial family-operated units in the Southern Great Plains are characterized by large-scale methods of production and a high degree of mechanization. The comparatively level land in this area is suitable for the use of multi-row planting and cultivating equipment. Families on these farms typically handle 50 to 60 acres of cotton, and produce around 20 to 30 bales of lint. More than three-fourths of the harvest labor is hired; this is chiefly migratory help.

The Black Prairie cotton farms represent in many respects a transition from the small man-mule type of organization farther east in the "Old Cotton South" to the large scale mechanized cotton farms in the Plains area. About 90 percent of the Black Prairie cotton farms have tractors and half or more of the cotton picking is performed by migratory workers. Consequently, family-operated farms here usually are larger and they have a larger acreage in cotton and complementary crops than do family-operated units farther east. Although cotton production is not high in this area, it is fairly stable.

Family-operated cotton farms in the rich Delta area are small in terms of acres, total output and family income. Plantation operations are not included in this series. A total of 150 hours is required to grow and harvest an acre of cotton by the mule-and-hand methods used on these farms. About 60 percent of this labor is required to harvest the crop, and as resident labor is almost the sole supply, a family's scale of operation is limited to about 15 to 20 acres of cotton.

Cotton farmers in these 3 areas had an all-round good year in 1947. Operators' returns were a record high even though harvested acreages, yields, and prices of "King Cotton" (the important enterprise) were below previous peaks. A combination of factors, all of which exceeded average was responsible for a record income in 1947 of operators on these farms.

The 1947 production of cotton on farms in the Southern Plains was exceeded only by the production in 1937 when both acreage harvested and yields were higher. However, the combined production of all crops and livestock in 1947 was less than in 1937 and in 4 other years since 1930. The index of prices received was the highest on record in 1947 and was nearly 50 points above the previous record in 1946 and over 180 points above the prewar average 1937-41 (table 10). The index of prices and wage rates paid increased 33 points or about 10 percent from 1946 to 1947. This was the biggest increase on record. The largest increase from 1946 to 1947 in cost rates came in building materials and machinery. They increased by 26 and 16 percent respectively. Wage rates and cotton snapping rates increased by 5 and 8 percent respectively.

In 1947 operators' returns on cotton farms in the Southern Plains were more than double the 1945-46 average and nearly 3.5 times the prewar average. Returns per hour to all labor jumped from 37 cents in 1937-41 to 88 cents in 1946 and to $1.50 in 1947. Operators of these farms have mechanized and improved their methods of production and they now use less labor per unit of product than a decade ago. Total production in 1937-38 was 10 percent below the 1947 production but total labor used was 18 percent higher in 1937-38.

Operators of Black Prairie cotton farms obtained higher cotton production in 1931, 1933, and 1937 than in 1947. Both harvested acreage and yields of cotton were higher in the former years. The combined production of all crops and livestock on Black Prairie cotton farms in 1947 was well below prewar and slightly below the long-time average production. Yields of all crops, and production of corn, oats, and hay in 1947 were below the prewar average; the only farms in the series with this record (table 9).

In 1947 prices of cotton lint and seed combined were slightly higher than in 1946 and a record high. Both prices received and prices and wage rates paid were also a record high in 1947. However, cost rates rose 12 percent from 1946 to 1947 compared with an increase of only 6 percent in prices received. The largest increases from 1946 to 1947 in prices received on Black Prairie cotton farms came in prices of livestock which rose over 30 percent and livestock product prices which were up 15 percent. Operators' returns and returns per hour to all labor in 1947 were the highest on record for these farms.

In 1947 nearly 90 percent of cash income on Delta cotton farms was from the sale of cotton (table 9). It was slightly less in previous years, but cotton has been by far the most important enterprise and it is so at present. Everything centers around cotton and any appreciable change in acreage, yield or price of cotton has a major effect on operators' returns.

Prices of cotton advanced materially during the war and postwar years and on these farms reached a record high in 1946. The 1947 price of cotton lint was a cent lower than in 1946 but the price of cottonseed was slightly higher in 1947 so that the combined price was equal in the two years. The 1947 price of cotton on these Delta farms was nearly 3 times the average price in 1937-41. Higher prices in 1947 compared with 1937-41, together with 11 percent higher production, tripled operators' returns.

TABLE 7.- LAND USE, LIVESTOCK NUMBERS, AND DISTRIBUTION OF INCOME AND EXPENSE, FAMILY-OPERATED SPRING WHEAT FARMS, NORTHERN PLAINS, BY TYPE, 1937-41 AVERAGE AND 1945-47

Item	Unit	SPRING WHEAT FARMS, NORTHERN PLAINS											
		Wheat-Corn Livestock				Wheat-Small Grain-Livestock				Wheat-Roughage-Livestock			
		1937-41	1945	1946	1947	1937-41	1945	1946	1947	1937-41	1945	1946	1947
Total land in farm	Acres	389	405	408	408	475	525	532	532	583	650	655	655
Proportion of land in:													
Cropland harvested	Percent	53	63	64	67	46	56	54	57	27	41	39	40
Idle, fallow and failure	do.	17	10	10	9	21	16	17	15	20	9	11	10
Pasture and other land	do.	30	27	26	24	33	28	29	28	53	50	50	50
Crops harvested:													
Wheat	Acres	76.0	97.0	105.0	107.0	122.0	152.0	165.0	165.0	82.0	146.0	149.0	149.0
Corn	do.	34.0	39.0	40.0	38.0	9.0	10.0	10.0	10.0	16.0	21.0	21.0	21.0
Other small grain	do.	76.0	106.0	104.0	118.0	70.0	118.0	104.0	113.0	43.0	85.0	78.0	83.0
Hay and forage sorghum	do.	43.0	37.0	44.0	45.0	43.0	48.0	46.0	47.0	61.0	68.0	65.0	70.0
Crop yield (per harvested acre):													
Wheat	Bushels	11.0	15.7	13.8	14.0	12.1	17.8	14.8	15.1	8.2	14.4	16.0	13.1
Corn	do.	20.3	27.0	26.3	19.2	20.1	24.0	28.1	26.1	-	-	-	-
All crops (index 1930-44 = 100)	Percent	105	148	128	122	105	161	128	134	91	170	186	158
Livestock on farm January 1:													
All cattle	Number	18.3	27.1	26.0	24.4	17.1	24.8	23.3	20.7	20.3	36.0	34.9	33.9
Milk cows	do.	7.6	8.0	7.2	6.8	7.2	8.7	7.9	7.3	9.2	11.3	10.1	9.3
Hogs, all ages	do.	10.0	18.0	19.9	14.6	3.9	7.8	7.5	5.3	4.9	10.9	10.1	8.5
Poultry	do.	78	130	129	119	55	85	83	72	53	88	87	80
Workstock	do.	4.3	3.1	2.7	2.3	4.3	3.4	2.9	2.4	5.7	5.6	4.9	4.2
Farms with tractors	Percent	74	100	100	100	68	100	100	100	60	90	96	100
Proportion of cash receipts from:													
Wheat	Percent	22	26	29	28	42	47	46	47	15	39	47	49
Other crops	do.	17	30	29	34	6	23	24	31	2	15	12	13
Hogs	do.	13	13	15	12	4	5	5	3	11	8	9	9
Cattle	do.	12	10	9	13	11	7	10	8	19	15	15	14
Other livestock	do.	4	5	4	3	4	3	3	2	4	4	3	3
Livestock products	do.	18	14	11	9	17	12	9	7	28	17	12	11
Government payments	do.	14	2	3	1	16	3	3	2	21	2	2	1
Proportion of cash expenditures for:													
Feed	do.	7	10	11	11	5	4	8	7	16	8	9	9
Labor	do.	3	14	10	9	6	23	15	15	3	35	30	23
Power and machinery	do.	57	49	52	53	57	49	54	54	50	38	43	47
General farm	do.	26	19	20	21	25	16	16	18	25	12	12	15
Miscellaneous	do.	7	8	7	6	7	8	7	6	6	7	6	6

TABLE 8.- INVESTMENT, INCOME, AND RELATED FACTORS, FAMILY-OPERATED SPRING WHEAT FARMS, NORTHERN PLAINS, BY TYPE, 1937-41 AVERAGE AND 1945-47 1/

Item	Unit	SPRING WHEAT FARMS, NORTHERN PLAINS											
		Wheat-Corn Livestock				Wheat-Small Grain-Livestock				Wheat-Roughage-Livestock			
		1937-41	1945	1946	1947	1937-41	1945	1946	1947	1937-41	1945	1946	1947
Total land in farm	Acres	389.0	405.0	408.0	408.0	475.0	525.0	532.0	532.0	583.0	650.0	655.0	655.0
Proportion rented	Percent	65	60	60	60	65	60	60	60	59	48	48	48
Cropland harvested	Acres	203	253	261	275	215	292	289	302	159	265	258	263
Total labor used	Hours	3,592	3,950	3,710	3,623	3,352	3,764	3,480	3,340	3,478	4,473	4,202	3,974
Labor hired	do.	191	380	289	280	327	630	487	455	164	1,016	795	620
Total investment	Dollars	11,241	18,673	20,700	23,617	10,406	19,696	21,454	24,270	8,294	18,111	19,958	23,465
Land and buildings	do.	8,183	11,340	12,501	13,954	7,364	11,876	13,082	14,587	5,717	10,654	11,764	13,238
Machinery and equipment	do.	1,114	1,597	1,768	2,192	1,275	1,665	1,745	2,156	912	1,356	1,398	1,697
Livestock	do.	1,233	2,657	2,970	3,528	1,089	2,234	2,300	2,580	1,312	3,123	3,333	4,167
Crops on hand	do.	711	3,079	3,461	3,943	678	3,921	4,327	4,947	353	2,978	3,463	4,363
Cash receipts	do.	1,906	7,254	8,543	11,275	1,818	8,040	9,698	11,680	1,298	6,658	7,873	9,554
Cash expenditures	do.	1,079	1,716	1,800	2,221	1,108	1,805	1,696	2,166	886	1,816	1,788	1,966
Net cash farm income	do.	827	5,538	6,743	9,054	710	6,235	8,002	9,514	412	4,842	6,085	7,588
Value of perquisites	do.	281	526	565	660	296	529	565	666	268	530	554	653
Net change in inventory	do.	559	377	410	1,198	532	128	-117	1,552	468	291	1,038	496
Net farm income	do.	1,667	6,441	7,718	10,912	1,538	6,892	8,450	11,732	1,148	5,663	7,677	8,737
Rent and interest paid by operator	Dollars	285	965	1,124	1,597	350	1,543	1,705	2,507	101	596	797	875
Operator's net farm income	do.	1,382	5,476	6,594	9,315	1,188	5,349	6,745	9,225	1,047	5,067	6,880	7,862
Operator's net cash farm income	do.	515	4,501	5,580	7,415	334	4,627	6,243	6,949	287	4,210	5,257	6,679
						Allocation of net farm income							
Land and buildings (net rental)	Dollars	352	1,704	2,008	2,888	453	2,515	2,787	4,132	92	1,159	1,588	1,755
Working assets (current interest rate)	do.	179	396	418	493	178	422	427	494	150	403	418	522
Total investment	do.	531	2,100	2,426	3,381	631	2,937	3,214	4,626	242	1,562	2,006	2,277
Operator and family labor	do.	1,136	4,341	5,292	7,531	907	3,955	5,236	7,106	906	4,101	5,671	6,460
Operator's labor	do.	899	3,519	4,539	6,741	746	3,374	4,753	6,646	687	3,353	4,927	5,662
All labor	do.	1,189	4,581	5,480	7,728	981	4,379	5,482	7,434	942	4,744	6,194	6,906
Percentage return to investment	Percent	4.8	11.2	11.7	14.3	6.1	14.9	15.0	19.1	3.0	8.6	10.1	9.7
Return per hour to all labor used	Dollars	.32	1.16	1.48	2.13	.29	1.16	1.58	2.23	.27	1.06	1.47	1.74
						Index numbers (1930-44=100)							
Gross farm income	Percent	95	293	340	469	92	313	363	497	88	330	414	469
Operator's net farm income	do.	99	393	474	669	93	421	531	726	93	449	609	696
Total production	do.	100	154	134	144	100	174	137	154	85	179	160	142
Production per hour of man labor	do.	106	148	139	152	108	160	144	168	97	161	153	143
Operating expense per unit of production	do.	84	89	101	111	75	72	82	88	89	81	85	105
Total cost per unit of production	do.	84	141	168	193	79	128	161	183	85	116	139	173
Total input per unit of production	do.	85	65	74	72	73	51	63	57	86	55	62	72
Power and machinery used (quantity)	do.	94	116	120	132	95	108	108	114	90	112	112	118
Prices received for products sold	do.	96	190	239	319	95	192	250	340	99	186	245	315
Prices paid for production items	do.	96	132	135	159	96	138	131	161	96	147	146	160

1/ Information for the years 1930-44 inclusive is given in F.M. 55 "Typical Family-Operated Farms, Adjustments, Costs, and Returns, 1930-45."

TABLE 9.- LAND USE, LIVESTOCK NUMBERS AND DISTRIBUTION OF INCOME AND EXPENSE, FAMILY-OPERATED COTTON FARMS, BY TYPE, 1937-41 AVERAGE AND 1945-47

Item	Unit	COTTON FARMS											
		Southern Plains				Black Prairie				Delta			
		1937-41	1945	1946	1947	1937-41	1945	1946	1947	1937-41	1945	1946	1947
Total land in farm	Acres	208	222	224	224	134	143	143	143	42	44	44	44
Proportion of land in:													
Cropland harvested	Percent	61	63	62	65	67	70	70	71	73	72	70	72
Idle and failure	do.	8	2	3	2	7	4	4	3	5	6	8	6
Pasture and other land	do.	31	35	35	33	26	26	26	26	22	22	22	22
Crops harvested:													
Cotton	Acres	56.0	40.0	47.0	67.2	46.0	49.3	51.8	56.5	15.1	14.5	14.5	15.2
Corn	do.	1/ 32.5	1/ 65.7	1/ 62.9	1/ 49.3	25.5	32.0	30.9	28.6	8.7	7.9	7.5	7.5
Hay and forage	do.	27.9	21.0	17.5	13.5	8.4	9.0	7.7	7.3	3.6	4.0	3.8	3.8
Other crops	do.	10.2	13.1	11.9	15.6	11.0	10.3	9.8	9.1	3.1	5.3	5.1	5.2
Crop yield (per harvested acre):													
Cotton, lint	Pounds	182	140	125	201	184	140	105	160	395	421	351	440
Corn	Bushels	1/ 16.9	1/ 12.0	1/ 12.7	1/ 13.4	20.7	16.5	16.3	17.0	19.2	26.0	18.2	20.8
All crops index (1930-44 = 100)	Percent	107	86	89	104	111	86	73	93	110	127	106	118
Livestock on farm, January 1:													
All cattle	Number	11.0	11.5	11.7	11.3	7.3	11.3	10.3	10.4	2.0	2.4	2.2	2.2
Milk cows	do.	4.7	6.3	5.9	5.7	3.5	4.9	4.4	4.8	1.3	1.4	1.1	1.2
Hogs, all ages	do.	7.3	7.0	6.9	5.7	3.7	4.5	4.0	3.4	3.3	3.8	3.5	3.6
Poultry	do.	103	140	137	118	83	125	129	108	26	40	38	35
Workstock	do.	3.8	1.9	1.4	1.2	3.3	2.3	1.7	1.4	2.0	2.0	2.0	2.0
Farms with tractors	Percent	59	87	93	100	42	78	84	90	0	0	0	0
Proportion of cash receipts from:													
Cotton, lint and seed	Percent	47	37	44	67	58	56	57	69	76	81	84	87
Other crops	do.	8	17	18	6	10	11	15	7	6	7	9	7
Cattle	do.	6	8	8	7	2	4	3	4	2	2	2	2
Other livestock	do.	8	8	8	6	4	6	6	5	1	4	1	2
Livestock products	do.	11	25	17	11	10	20	16	13	1	4	2	1
Government payments	do.	20	5	5	3	16	3	3	2	14	2	2	1
Proportion of cash expenditures for:													
Ginning	do.	14	8	8	11	13	7	5	7	24	16	15	18
Labor	do.	22	26	25	39	17	36	33	36	4	40	40	45
Power and machinery	do.	45	47	47	37	44	34	38	38	22	17	17	15
General farm	do.	11	9	10	7	15	9	10	9	40	16	15	9
Miscellaneous	do.	8	10	10	6	11	14	14	10	10	11	13	13

1/ Grain sorghum.

TABLE 10.- INVESTMENT, INCOME AND RELATED FACTORS, FAMILY-OPERATED COTTON FARMS, BY TYPE, 1937-41 AVERAGE AND 1945-47 1/

Item	Unit	COTTON FARMS											
		Southern Plains				Black Prairie				Delta of Mississippi			
		1937-41	1945	1946	1947	1937-41	1945	1946	1947	1937-41	1945	1946	1947
Total land in farm	Acres	208.0	222.0	224.0	224.0	134.0	143.0	143.0	143.0	42.0	44.0	44.0	44.0
Proportion rented	Percent	71	69	69	69	56	54	54	54	60	60	60	60
Cropland harvested	Acres	126	141	139	146	91	101	100	102	31	32	31	32
Total labor used	Hours	3,818	3,219	3,083	3,285	4,092	4,409	4,183	4,241	3,489	3,440	3.357	3.519
Labor hired	do.	868	590	586	761	988	1,367	1,231	1,321	537	621	588	667
Total investment	Dols.	9,303	14,035	15,501	17,262	8,824	15,967	17,787	19.909	3,460	6,251	7,242	7.936
Land and buildings	do.	7,413	11.100	12,320	13,664	7,498	13,442	15,301	17,017	2,846	5,236	6,248	6,864
Machinery and equipment	do.	829	1,289	1,376	1,625	520	909	965	1,170	139	200	210	228
Livestock	do.	765	1.051	1,121	1.274	580	990	974	1,132	326	454	465	505
Crops on hand	do.	296	595	684	699	226	626	547	590	149	361	319	339
Cash receipts	do.	2,318	3.102	4,074	7,073	1,660	3.081	3,361	4,810	1,079	2.206	2,465	3,111
Cash expenditures	do.	952	1.312	1,396	2,189	733	1,346	1,416	1,903	282	465	450	541
Net cash farm income	do.	1,366	1.790	2,678	4,884	927	1,735	1,945	2,907	797	1,741	2,015	2,570
Value of perquisites	do.	279	515	523	619	247	466	454	560	212	454	434	540
Net change in inventory	do.	74	7	48	165	79	-4	59	76	16	45	-23	87
Net farm income	do.	1.719	2,312	3,249	5,668	1,253	2,197	2,458	3.543	1,025	2,240	2.426	3,197
Rent and interest paid by operator	Dols.	323	374	551	984	195	340	404	607	161	321	392	504
Operator's net farm income	do.	1,396	1,938	2.698	4,684	1,058	1,857	2.054	2,936	864	1,919	2,034	2,693
Operator's net cash farm income	do.	1,023	1,379	2,093	3.863	715	1,365	1,513	2,270	628	1,407	1,610	2,052
						Allocation of net farm income							
Land and buildings (net rental)	Dols.	420	509	768	1,394	301	581	703	1.078	235	504	624	813
Working assets (current interest rate)	do.	118	179	178	201	82	154	139	162	35	57	51	55
Total investment	do.	538	688	946	1,595	383	735	842	1,240	270	561	675	868
Operator and family labor	do.	1,181	1,624	2,303	4,073	870	1.462	1,616	2.303	755	1.679	1,751	2,329
Operator's labor	do.	1,097	1,504	2,248	4,001	776	1,200	1,376	2.059	640	1,506	1,568	2,124
All labor	do.	1,402	1.972	2,698	4,918	1,000	1,939	2.079	2,992	810	1,865	1,933	2,575
Percentage return to investment	Percent	5.8	4.9	6.1	9.2	4.3	4.6	4.7	6.2	7.8	8.9	9.3	10.9
Return per hour to all labor used	Dols.	.37	.61	.88	1.50	.24	.44	.50	.71	.24	.54	.58	.73
						Index Numbers (1930-44 = 100)							
Gross farm income	Percent	104	143	183	310	99	179	194	270	101	210	223	290
Operator's net farm income	do.	108	150	209	362	102	179	197	282	101	223	236	313
Total production	do.	106	81	82	119	105	92	76	98	110	122	104	121
Product on per hour of man labor	do.	109	99	105	141	111	90	79	101	103	117	112	122
Operating expense per unit of production	do.	91	158	190	178	90	183	222	225	89	131	136	141
Total cost per unit of production	do.	87	187	210	195	88	205	254	248	93	144	171	176
Total input per unit of production	do.	91	108	104	81	93	112	129	106	93	80	85	77
Power and machinery used (quantity)	do.	109	132	136	142	99	135	137	145	101	114	115	115
Prices received for products sold	do.	89	178	222	271	87	187	242	268	88	182	215	236
Prices paid for production items	do.	96	133	145	178	93	148	153	178	93	153	154	171

1/ Information for the years 1930-44 inclusive is given in F.M. 55 "Typical Family-Operated Farms, Adjustments, Costs, and Returns, 1930-45."

Prices of cotton advanced materially during the war and postwar years and on these farms reached a record high in 1946. The 1947 price of cotton lint was a cent lower than in 1946 but the price of cottonseed was slightly higher in 1947 so that the combined price was equal in the two years. The 1947 price of cotton on these Delta farms was nearly 3 times the average price in 1937-41. Higher prices in 1947 compared with 1937-41, together with 11 percent higher production, tripled operators' returns. Returns to labor in 1947, though 3 times prewar returns, were still lower on these and the Black Prairie cotton farms than on the other types covered in this study. Cotton is an intensive labor using crop, particularly in this area, and the mule-and-hand methods used on these farms have permitted no reduction in labor requirements per acre of cotton.

U. S. DEPARTMENT OF AGRICULTURE
Washington 25, D. C.

OFFICIAL BUSINESS

BAE-FM 70 - 10/48 - 2500
Permit No. 1001

Penalty for private use to avoid
payment of postage $300

U S DEPT OF AGRICULTURE LIBRARY
DOCUMENTS
BAE-W-D WASHINGTON D C 25